

PTO/SB/21 (07-06)

Approved for use through 09/30/2006. OMB 0651-0031  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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**TRANSMITTAL  
FORM**

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

10

Application Number

10/709,921

Filing Date

06/06/2004

First Named Inventor

Yung-Yi LIU

Art Unit

1745

Examiner Name

ECHELMAYER, ALIX ELIZABETH

Attorney Docket Number

NANP0002USA

**ENCLOSURES (Check all that apply)**

Fee Transmittal Form



Fee Attached



Amendment/Reply



After Final



Affidavits/declaration(s)



Extension of Time Request



Express Abandonment Request



Information Disclosure Statement



Certified Copy of Priority Document(s)

Reply to Missing Parts/  
Incomplete ApplicationReply to Missing Parts  
under 37 CFR 1.52 or 1.53

Drawing(s)



Licensing-related Papers



Petition

Petition to Convert to a  
Provisional Application

Power of Attorney, Revocation



Change of Correspondence Address



Terminal Disclaimer



Request for Refund



CD, Number of CD(s) \_\_\_\_\_

☐ Landscape Table on CD

After Allowance Communication to TC

Appeal Communication to Board  
of Appeals and InterferencesAppeal Communication to TC  
(Appeal Notice, Brief, Reply Brief)

Proprietary Information



Status Letter

Other Enclosure(s) (please identify  
below):

1. A copy of the Front Page of Patent

2. A copy of Fee Transmittal submitted on  
04/17/20073. Copies of the Notice of Recordation dated  
06/07/2004

4. The Form of PTO/SB/44

Remarks

Request for Certificate of Correction of Office Mistake

**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT**

Firm Name

North America Intellectual Property Corporation

Signature

*Winston Hsu*

Printed name

Winston Hsu

Date

JUN 07 2007

Reg. No.

41,526

**CERTIFICATE OF TRANSMISSION/MAILING**

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature

*Stephanie Lai*

Typed or printed name

Stephanie Lai

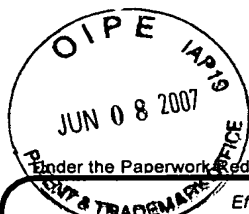
Date

JUN 07 2007

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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JUN 12 2007



PTO/SB/17 (02-07)

Approved for use through 02/28/2007. OMB 0651-0032

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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Effective on 12/08/2004.  
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).**FEE TRANSMITTAL**  
**For FY 2007**☐ Applicant claims small entity status. See 37 CFR 1.27**TOTAL AMOUNT OF PAYMENT** (\$) **0.00****Complete if Known**

Application Number	10/709,921
Filing Date	06/06/2004
First Named Inventor	Yung-Yi LIU
Examiner Name	EHELMMEYER, ALIX ELIZABETH
Art Unit	1745
Attorney Docket No.	NANP0002USA

**METHOD OF PAYMENT** (check all that apply)☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): \_\_\_\_\_☒ Deposit Account Deposit Account Number: **50-3105** Deposit Account Name: **North America Intellectual Property Corporation**

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, **except for the filing fee**☒ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 ☒ Credit any overpayments**WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.****FEE CALCULATION****1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

**2. EXCESS CLAIM FEES**

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180
<b>Total Claims</b>		
<b>Extra Claims</b>		
<b>Fee (\$)</b>		
<b>Fee Paid (\$)</b>		
HP = highest number of total claims paid for, if greater than 20.		
<b>Indep. Claims</b>		
<b>Extra Claims</b>		
<b>Fee (\$)</b>		
<b>Fee Paid (\$)</b>		
HP = highest number of independent claims paid for, if greater than 3.		

**3. APPLICATION SIZE FEE**

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
- 100 =	/ 50	(round up to a whole number) x	=	

**4. OTHER FEE(S)**

Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): \_\_\_\_\_

**SUBMITTED BY**

Signature	<i>Winston Hsu</i>	Registration No. (Attorney/Agent)	41,526	Telephone	3027291562
Name (Print/Type)	Winston Hsu	Date	JUN 07 2007		

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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JUN 12 2007



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent No. : 7,220,507 B2  
Issue Date : May 22, 2007  
Inventor : Yung-Yi Liu et al.  
Docket No.: NANP0002USA

Title: FLAT PANEL DIRECT METHANOL FUEL CELL AND METHOD OF MAKING  
THE SAME

To: Commissioner for Patents  
P.O. BOX 1450  
Alexandria, VA 22313-1450

Subject: Request for Certificate of Correction of Office Mistake

Dear Sir:

The number of the assignee listed on the front page of the above-identified Patent is incorrect (Attachment 1). Documents on record indicate this as an Office mistake of consequence.

The applicant hereby requests that a Certificate of Correction be issued under 37 CFR 1.322 to add Nan Ya Printed Circuit Board Corporation, Taoyuan (TW), as one of the assignees which were correctly listed on the Fee Transmittal submitted on 04/17/2007 (Attachment 2) and the Notice of Recordation dated 06/07/2004 (Attachment 3).

JUN 12 2007

Respectfully submitted,

Winston Hsu

Date: JUN 07 2007

Winston Hsu, Patent Agent No. 41,526

P.O. BOX 506, Merrifield, VA 22116, U.S.A.

Voice Mail: 302-729-1562

Facsimile: 806-498-6673

e-mail : winstonhsu@naipo.com

(Note: Please leave a message in my voice mail if you need to talk to me. The time in D.C. is 12 hours behind the Taiwan time, i.e. 9 AM in D.C. = 9 PM in Taiwan).

Please add "Nan Ya Printed Circuit Board Corporation, Taoyuan(TW)" to be one of the assignees

Attachment 1



US007220507B2

(12) **United States Patent**  
**Liu et al.**

(10) **Patent No.:** **US 7,220,507 B2**  
(45) **Date of Patent:** **May 22, 2007**

(54) **FLAT PANEL DIRECT METHANOL FUEL CELL AND METHOD OF MAKING THE SAME**

(75) **Inventors:** Yung-Yi Liu, Taipei Hsien (TW); Shi-Shyan James Shang, Taoyuan (TW); Hsi-Ming Shu, Taipei Hsien (TW); Tsang-Ming Chang, Taipei (TW); Feng-Yi Deng, Taipei (TW)

(73) **Assignee:** Antig Technology Co., Ltd., Taipei (TW)

(\*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 262 days.

(21) **Appl. No.:** 10/709,921

(22) **Filed:** Jun. 6, 2004

(65) **Prior Publication Data**

US 2005/0214621 A1 Sep. 29, 2005

(30) **Foreign Application Priority Data**

Mar. 26, 2004 (TW) 93108441 A

(51) **Int. Cl.**  
**H01M 8/02** (2006.01)  
**H01M 8/10** (2006.01)

(52) **U.S. Cl.** 429/32; 429/36

(58) **Field of Classification Search** 429/32  
See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

6,127,058 A *	10/2000	Pratt et al.	429/30
6,451,624 B1 *	9/2002	Farnworth et al.	438/106
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2002/0043402 A1 *	4/2002	Juskey et al.	174/260
2003/0091878 A1 *	5/2003	Rosenfeld et al.	429/19
2005/0158608 A1 *	7/2005	Shu et al.	429/34

\* cited by examiner

*Primary Examiner*—Susy Tsang-Foster

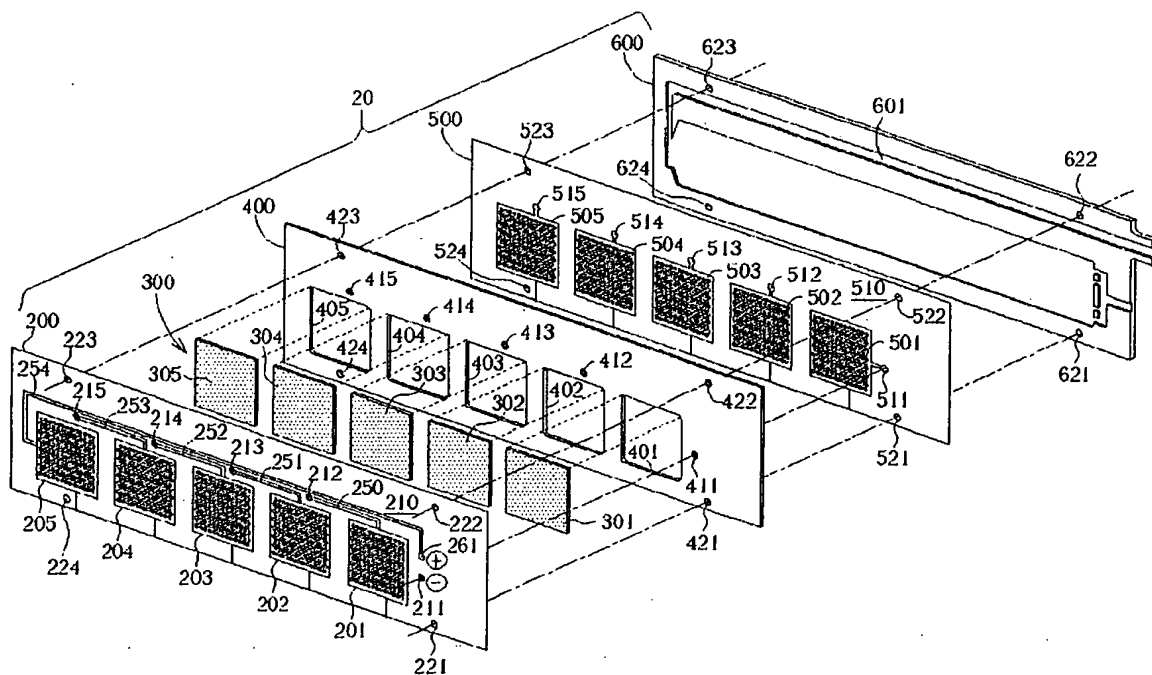
*Assistant Examiner*—Alix Echelmeyer

(74) *Attorney, Agent, or Firm*—Winston Hsu

(57) **ABSTRACT**

A flat panel DMFC (direct methanol fuel cell) includes an integrated cathode electrode sheet; a membrane electrode assembly (MEA) unit; an intermediate bonding layer; an integrated anode electrode sheet; and a fuel container. The integrated cathode/anode electrode sheets are manufactured by using printed circuit board (PCB) compatible processes.

**13 Claims, 12 Drawing Sheets**



1 2 2007

## Attachment 2

## PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** Mail Stop ISSUE FEE  
 Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 or **Fax** (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

27765 7580 03/05/2007

NORTH AMERICA INTELLECTUAL PROPERTY  
 CORPORATION  
 P.O. BOX 506  
 MERRIFIELD, VA 22116

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission  
 I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

Stephanie Lai (Depositor's name)  
 Stephanie Lai (Signature)  
 04/17/2007 (Date)

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,921	06/06/2004	Yung-Yi LIU	NANP0002USA	3920

TITLE OF INVENTION: FLAT PANEL DIRECT METHANOL FUEL CELL AND METHOD OF MAKING THE SAME

APPLN TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$300	\$0	\$1700	06/05/2007

EXAMINER	ART UNIT	CLASS-SUBCLASS
ECHELMAYER, ALIX ELIZABETH	1745	429-032000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).  
☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.  
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list  
 (1) the names of up to 3 registered patent attorneys or agents OR, alternatively,  
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1. Winston Hsu

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE  
 Nan Ya Printed Circuit Board Corporation  
 (B) RESIDENCE (CITY AND STATE OR COUNTRY)  
 338, Sec. 1, Nankun Road, Luchu, Taoyuan, Taiwan, R.O.C.  
 7F-1 No 342 Fu-Hsin North Road, Taipei, Taiwan, R.O.C.

ANTIG TECHNOLOGY CO., LTD.  
 Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

☒ Issue Fee  
☒ Publication Fee (No small entity discount permitted)  
☐ Advance Order - # of Copies

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

☐ A check is enclosed.  
☐ Payment by credit card. Form PTO-2038 is attached.  
☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 50-3105 (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.

☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature

Winston Hsu

Date 04/17/2007

Registration No. 41,526

Typed or printed name

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UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office  
ASSISTANT SECRETARY AND COMMISSIONER  
OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231



\*800012245A\*

JUNE 07, 2004

PTAS

NAIPO (NORTH AMERICA INTERNATIONAL PATEN  
P.O. BOX 506  
MERRIFIELD, VA 22116

*Zoe Tseng*

*2004/6/23*

UNITED STATES PATENT AND TRADEMARK OFFICE  
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 06/06/2004

REEL/FRAME: 014696/0319  
NUMBER OF PAGES: 3

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).  
DOCKET NUMBER: NANP0002USA

ASSIGNOR:  
LIU, YUNG-YI

DOC DATE: 05/28/2004

ASSIGNOR:  
SHANG, SHI-SHYAN JAMES

DOC DATE: 05/28/2004

ASSIGNOR:  
SHU, HSI-MING

DOC DATE: 05/28/2004

ASSIGNOR:  
CHANG, TSANG-MING

DOC DATE: 05/28/2004

ASSIGNOR:  
DENG, FENG-YI

DOC DATE: 05/28/2004

JUN 12 2007

ASSIGNEE:

NAN YA PRINTED CIRCUIT BOARD  
CORPORATION

338, SEC. 1, NANKAN ROAD, LUCHU  
TAOYUAN, TAIWAN

ASSIGNEE:

ANTIG TECHNOLOGY CO., LTD.  
7F-1 NO 342 FU-HSIN NORTH ROAD  
TAIPEI, TAIWAN

SERIAL NUMBER: 10709921

FILING DATE:

PATENT NUMBER:

ISSUE DATE:

TITLE: FLAT PANEL DIRECT METHANOL FUEL CELL AND METHOD OF MAKING THE SAME

LAZENA MARTIN, EXAMINER  
ASSIGNMENT DIVISION  
OFFICE OF PUBLIC RECORDS

JUN 12 2007



## PATENT ASSIGNMENT

Electronic Version v07  
Stylesheet Version v02

06/06/2004  
800012245

SUBMISSION TYPE:	NEW ASSIGNMENT	APPLICATION NUMBER 10/709921																					
NATURE OF CONVEYANCE:	ASSIGNMENT OF ASSIGNOR'S INTEREST																						
CONVEYING PARTY DATA																							
<table border="1"><thead><tr><th>Name</th><th>Execution Date</th></tr></thead><tbody><tr><td>Yung-Yi LIU</td><td>2004-05-28</td></tr><tr><td>Shi-Shyan James SHANG</td><td>2004-05-28</td></tr><tr><td>Hsi-Ming SHU</td><td>2004-05-28</td></tr><tr><td>Tsang-Ming CHANG</td><td>2004-05-28</td></tr><tr><td>Feng-Yi DENG</td><td>2004-05-28</td></tr></tbody></table>						Name	Execution Date	Yung-Yi LIU	2004-05-28	Shi-Shyan James SHANG	2004-05-28	Hsi-Ming SHU	2004-05-28	Tsang-Ming CHANG	2004-05-28	Feng-Yi DENG	2004-05-28						
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Feng-Yi DENG	2004-05-28																						
RECEIVING PARTY DATA																							
<table border="1"><thead><tr><th>Name</th><th>Street Address</th><th>Internal Address</th><th>City</th><th>State/Country</th><th>Postal Code</th></tr></thead><tbody><tr><td>Nan Ya Printed Circuit Board Corporation</td><td>338, Sec. 1, Nankan Road, Luchu</td><td></td><td>Taoyuan</td><td>TAIWAN</td><td></td></tr><tr><td>ANTIG TECHNOLOGY CO., LTD.</td><td>7F-1 No 342 Fu-Hsin North Road</td><td></td><td>Taipei</td><td>TAIWAN</td><td></td></tr></tbody></table>						Name	Street Address	Internal Address	City	State/Country	Postal Code	Nan Ya Printed Circuit Board Corporation	338, Sec. 1, Nankan Road, Luchu		Taoyuan	TAIWAN		ANTIG TECHNOLOGY CO., LTD.	7F-1 No 342 Fu-Hsin North Road		Taipei	TAIWAN	
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ANTIG TECHNOLOGY CO., LTD.	7F-1 No 342 Fu-Hsin North Road		Taipei	TAIWAN																			
CORRESPONDENCE DATA																							
FAX NUMBER: 886229295950 <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i> When the customer number has been provided, the Office of Public Records will obtain the correspondence data from the official record on file at the USPTO. CUSTOMER NUMBER: 027765																							
NAME OF PERSON SIGNING:		WINSTON HSU																					
DATE SIGNED:		2004-06-05																					
Total Attachments: 2 source=NANP0002ASS1.tif source=NANP0002ASS2.tif																							

JUN 12 2007

**UNITED STATES PATENT AND TRADEMARK OFFICE  
CERTIFICATE OF CORRECTION**

Page 1 of 1

PATENT NO. : 7,220,507 B2  
APPLICATION NO.: 10/709,921  
ISSUE DATE : May 22, 2007  
INVENTOR(S) : Yung-Yi Liu et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Title page,  
Item [73], add "Nan Ya Printed Circuit Board Corporation, Taoyuan (TW) " to be one of the assignees.

MAILING ADDRESS OF SENDER (Please do not use customer number below):

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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**JUN 12 2007**